



# THE USE OF TURMERIC TAMARIND AS LOCAL WISDOM TO REDUCE DYSMENORRHEA IN ADOLESCENCE: LITERATURE REVIEW



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## ABSTRACT

**Introduction:** Local wisdom is part of the culture or wealth that exists in a particular area. Local wisdom covers various things, including a diversity of resources that can be used to overcome health problems. Turmeric Tamarind is a spice plant that can be used as a traditional medicine or health drink to reduce menstrual pain (dysmenorrhea). However, adolescence still don't know the benefits and effects of turmeric tamarind and prefer medication to treat pain. **Purpose:** This literature review aims to find out the effect of turmeric tamarind to reduce dysmenorrhea in adolescence. **Methods:** Articles are derived from electronic databases such as Google Scholar and Scopus published from 2020 to 2024. **Results:** Based on the 10 articles used in this literature review, it shows that turmeric tamarind can reduce dysmenorrhea pain with its anti-inflammatory agent. **Conclusion:** Turmeric Tamarind as spice plant can be used to reduce dysmenorrhea in adolescence.

**Keywords:** Turmeric tamarind, dysmenorrhea, adolescence

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## INTRODUCTION

Adolescence is a transition period from childhood to adulthood. According to (WHO, 2021), adolescence are residents aged 10 to 19 years. Adolescence are aged between 10 and 24 years and not married (BKKBN, 2015). Based on this, adolescence are aged 10 to 24 years and are not married.

During adolescence period, adolescence experience puberty which is characterized by rapid growth and development. Girl who enter puberty will experience menstruation (Ilham, 2023). Menstruation is the process of shedding blood, mucus, cell debris from the endometrium which is accompanied by a periodic and cyclic desquamation process of the endometrium for about 14 days after ovulation (Sundari et al, 2022). During menstruation, teenagers experience various discomforts, one of which is dysmenorrhea. Dysmenorrhea is pain during menstruation accompanied by cramping that is centered in the lower abdomen (Murbiah & Amanda, 2022).

The prevalence of dysmenorrhea according to WHO (2018) shows that more than 50% of woman in every country experience dysmenorrhea. Meanwhile, the prevalence of dysmenorrhea in Indonesia is 55% with 15% of them complaining of the impact of dysmenorrhea, namely limited activities (Kojo et al, 2021). According to (Puspita & Anjarwati, 2019), dysmenorrhea is divided into two, namely primary and secondary. Primary dysmenorrhea is a painful disorder without any problems with the vital organs that occurs before or during the first day of menstruation and lasts for several hours. Meanwhile, secondary dysmenorrhea is a pain disorder caused by pathological diseases such as salpingitis, uterine adenomyosis and endometriosis.

Based on this, dysmenorrhea pain can be treated with various things ranging from pharmacological and non-pharmacological. Pharmacological therapy is in the form of administering NSAIDs which have an analgesic

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effect which can inhibit prostaglandin synthesis and reduce the amount of menstrual blood lost. Examples of NSAID drugs are ibuprofen, mafenamic acid and diclofenac (Bofill, Lethaby & Farquhar, 2019). However, the use of this drug will cause long-term side effects such as gastric ulcers or peptic ulcers as well as secondary anemia due to gastrointestinal bleeding (Bofill, Lethaby & Farquhar, 2019). Non-pharmacological therapies that are usually used for dysmenorrhea include regular physical activity, massage, warm compresses and herbal plants. Some herbal plants that can reduce pain are turmeric, tamarind, cinnamon, cloves and ginger (Widya, 2020).

Herbal plants or spices are one of the local wisdoms. According to (Azmin and Rahmawati, 2019), local wisdom is a view of life and knowledge as well as all life strategies that are manifested in activities carried out by local communities to answer problems in meeting daily needs. One of the ways people have done it for generations is to use plants as medicine to treat certain diseases or health problems (Rubianti et al, 2022). The spice plant used in this case to treat dysmenorrhea pain is turmeric tamarind.

According to research (Septiwiarsi et al, 2024), the group given turmeric tamarind drinks

obtained a p value of 0.000, meaning that there was an effect of turmeric tamarind drinks on dysmenorrhea complaints in young women. Then, other research according to (Rezkiyanti & Rusli, 2022) showed that there was an effect of turmeric tamarind drink as primary dysmenorrhea therapy on reducing students' pain scales.

## METHOD

The design in this study is a literature review. The data collection process was carried out by conducting literature searches in the form of national and international scientific articles. The author conducted a search using databases, namely Google Scholar and Scopus. The author uses the keywords Turmeric Tamarind, Dysmenorrhea, Adolescents. Articles that met the inclusion and exclusion criteria were selected for analysis. The selected articles range from 2020-2024. The inclusion criteria were national and international journals that were relevant to the topic of turmeric tamarind to reduce dysmenorrhea pain, quasi-experimental; pre-experiment methods and respondents were adolescence. Meanwhile, the exclusion criteria are journals before 2019; literature review method; systematic review and respondents of reproductive age (18-35 years).

## RESULT

No	Title	Author	Aim	Method	Results
1	Effectiveness of Turmeric Tamarind Drink as Primary Dysmenorrhea Therapy for Reducing Pain Scale	Rezkiyanti & Rusli (2022)	To determine the effectiveness of the turmeric tamarind drink as a dysmenorrhea therapy on reducing the pain scale	Quasy experiment using a non-equivalent control group design	The results of the analysis from the Wilcoxon Signed Ranks Test showed that for the treatment group and control group, pVaule was $0.000 < 0.05$ , which indicated that there was a significant difference between the pre and post scales of the two groups. In the Mann Whitney Test analysis, a pValue value of $0.001 < 0.05$ was obtained, indicating that there was an effect of turmeric acid drink on both groups. There was an influence on the effectiveness of turmeric tamarind drink as primary dysmenorrhea therapy on reducing the pain scale.
2	Effectiveness of Turmeric Tamarind as a Dysminorrhea Reliever in Adolescents in PangSORan, Banten Province	Suryati & Maryati (2024)	Analyzing the effect of giving tamarind turmeric drinks on reducing dysmenorrhoea in adolescents	Quasi experimental with a Two Group Pre Post Design design	The results of the Mann-Whitney U statistical test showed that the p-value was $0.018 < 0.05$ , so it can be concluded that Ho was rejected, namely that there was a significant difference in the average of adolescence who experienced dysmenorrhea in the intervention group who were given turmeric tamarind drinks and a control group that was not given turmeric tamarind drinks
3	Effectiveness of Giving Turmeric Tamarind in Reducing Dysmenorrhea Pain Scale in Adolescent Girls at SMAN 9 Medan in 2022	Agustina, Nuriah & Putri (2022)	Compare the average dysmenorrhea pain scale before and after receiving turmeric acid treatment was compared control group.	Non-equivalent control group and a quasi-experimental methodology	The average dysmenorrhea pain scale after being given turmeric tamarind in the experimental group was 3.40 while in the control group (posttest) it was 4.80 with an average difference of -1.400 and a p-value of 0.050 (0.05). According to research findings, the experimental group and the control group obtained different results from administering turmeric tamarind to reduce the pain scale associated with dysmenorrhea.
4	The Effect of Giving Sour Turmeric Tamarind on the Intensity of Menstrual Pain in Adolescent Girls	Saputri, Dwi & Jurpia (2020)	To determine the effect of giving sour turmeric tamarind on the intensity of menstrual pain in adolescence at SMA Negeri 1 Teluk Mengkudu	A quasi experimental design with a one-group pretest-posttest design	The research results showed that before being given the turmeric tamarind drink, the majority of respondents experienced pain in the moderate pain category, 30 people (83.3%). After being given turmeric tamarind, the majority of respondents experienced pain in the mild pain category, 23 people (63.9%). Through bivariate analysis using the Wilcoxon sign rank test, a p-value of $0.000 < 0.05$ was obtained. In conclusion, there is a difference before and after giving the turmeric tamarind drink on the intensity of menstrual pain (dysmenorrhea).
5	The Effectiveness of Curcuma Longa Drink in Decreasing the Intensity of Dysmenorrhea	Utami et al (2020)	The use of Curcuma longa drinks to reduce dysmenorrhea pain by comparing household industries and the ingredients studied	Experiments with pre-test and post-test research designs	There is a significant difference in giving Curcuma longa drink to reduce dysmenorrhea pain in young women ( $p \leq 0.001$ )

No	Title	Author	Aim	Method	Results
6	Effect of Turmeric Tamarind Drink on Primary Dysmenorrhea in Adolescent Girls	Ulaa, Dhora, Murbiah (2022)	To determine the effect of turmeric tamarind drink on primary dysmenorrhea in adolescent girls at SMA Negeri 10 Palembang	Quantitative research with quasi experiments	From statistical tests, the median pretest for the experimental group and the control group was the same, namely 5.00 and the median posttest for the experimental group was 1.00, while the median posttest for the control group was 3.00. The difference between the pretest and posttest of the experimental group and the control group is the same, namely p value (0.000) <0.05
7	Turmeric Tamarind (Curcuma Doemstica Val) Reduces the Intensity of Menstrual Pain	Fatmawati et al (2020)	Knowing the potential of turmeric tamarind herbal medicine on the intensity of menstrual pain in adolescence in Kedungsoko Village, Mantup District, Lamongan Regency	Pra Experiment One Group Pre-Post Test Design	The results of the Wilcoxon Signed Ranks Test statistical test show that the average value before being given herbal tamarind turmeric was 3.2188 and the standard deviation value was 1.03906, while the average value after being given herbal turmeric tamarind was 1.4062 and the standard deviation value was 0.66524. With a significant value = 0.000, meaning p<0.05 then H1 is accepted, meaning there is potential for herbal medicine turmeric tamarind on the intensity of menstrual pain adolescence
8	An Investigation of the Effect of Curcumin (Turmeric) Capsule on the Severity and Duration of Dysmenorrhea in Students of Iran University of Medical Sciences	Tabari et al (2020)	Designed for investigated the effect of curcumin (turmeric) capsules on severity and duration dysmenorrhea	Double blind randomized controlled clinical tria	The mean pain intensity score after intervention in the drug group was $4.6 \pm 1.5$ and in the placebo group was $5.8 \pm 1.82$ . The average duration of pain before taking the pill in the drug group was $5.408 \pm 3.001$ and in the placebo group was $0.725 \pm 0.04$ ; also three hours after taking the pill in the drug group was $-5.017 \pm 2.294$ and in the placebo group it was $0.614 \pm 0.99$ , which shows a significant difference between the two groups in terms of severity and duration of pain ( $p < 0.001$ )
9	The Effectiveness of Tamarind Turmeric Water on the Dysmenorrhea Pain Scale in Teenage Girl	Lestari,Tubagus & Septi (2023)	Examining the effectiveness of turmeric tamarind water in reducing menstrual pain in adolescent girls	Pre experimental research design with the One Group Pre Test Post Test approach	Based on statistical tests, a p-value of 0.000 was obtained, less than 0.05, which shows the effectiveness of turmeric and tamarind water in reducing dysmenorrhea pain in young women at Waway Karya Integrated Vocational School, East Lampung in 2023
10	The Effectiveness of Giving Tumeric Tamarind in Reducing Menstrual Pain (Dysmenorrhea) in Young Girls at Mts Al-Muqowamah	Makiyah & Nofa (2023)	To determine the effectiveness of giving turmeric tamarind in reducing menstrual pain (dysmenorrhea) in young girls at MTs Al-Muqowamah	Pre-experimental design with one group pretest-posttest design	The Wilcoxon test shows the effectiveness of giving turmeric tamarind in reducing menstrual pain (dysmenorrhea) in adolescent girls at MTs Al-Muqowamah with a p value of 0.000

## DISCUSSION

Menstruation is a natural process that occurs in women every month. Menstruation is the gradual shedding of the endometrial lining of the uterus and in some women, in this case teenagers, dysmenorrhea can occur (Hikma, 2021).

Dysmenorrhea is pain during menstruation which usually occurs at the beginning of the menstrual period. Dysmenorrhea is a menstrual disorder that is experienced by many women, with dysmenorrhea occurring in 89.5%, menstrual discomfort in 31.2% and prolonged menstruation in 3.5% (Sulistiyorini et al, 2017).

Primary dysmenorrhea occurs due to prostaglandin activity which has no effect on the reproductive system. The severity of dysmenorrhea is divided into mild, moderate and severe so that it has an impact on daily activities (Revianti & Yanto, 2021). If dysmenorrhea is not treated, it will cause discomfort and affect activities, so treatment is needed to overcome and reduce dysmenorrhea.

Dysmenorrhea or menstrual pain can be treated with non-pharmacological therapy in the form of consuming tamarind turmeric. Turmeric contains an active compound, namely curcumin (2018). The way curcumin works is by inhibiting the cyclooxygenase (COX-2) reaction to inhibit or reduce inflammation which affects uterine contractions. Apart from that, the analgesic content will also inhibit excessive release of prostaglandin through the uterine epithelial tissue and inhibit uterine contractions (Agusafutri, 2017).

Apart from turmeric, tamarind also contains natural ingredients, namely anthocyanins, which act as anti-inflammatories (Novi & Ayu, 2015). Tamarind can improve blood circulation to prevent blood vessel contractions during dysmenorrhea.

This is in line with research (Rezkiyanti & Rusli, 2022). The treatment group was given a turmeric and tamarind herbal drink. Curcumin, essential oils, flavonoids and other compounds in turmeric acid are analgesic and anti-inflammatory agents that can have a relieving effect when pain occurs. Then, according to Suryati & Maryati (2024) warm

infusion of tamarind turmeric has a significant effect on the pain scale in female students with dysmenorrhea. According to Agustina, Nuriah & Putri (2023), turmeric tamarind was given to respondents who experienced dysmenorrhea pain during menstruation on the first day, by giving it twice/day, 400 ml/day, namely 200 ml in the morning and 200 ml in the afternoon.

Furthermore, research according to Saputri, Dwi & Jurpia (2020) used turmeric acid drink powder and there were differences before and after giving turmeric tamarind drink on the intensity of menstrual pain (dysmenorrhea) in young women. According to other research from Utami et al (2020), there is a comparison of curcuma longa drinks from the home industry and curcuma longa from researchers. The results showed differences in pain between the two groups, there was no significant difference in the administration of home industry curcuma longa and researcher's curcuma. Both interventions were equally effective in reducing the intensity of dysmenorrhea pain. The difference only lies in the processing method with standard tools and home industry.

In subsequent research, according to Ulaa, Dhora & Murbiah (2022), there was a greater difference in mean pretest and posttest pain in the experimental group compared to the control group. This is because consuming turmeric tamarind drinks can reduce pain because it acts as an analgesic. According to Fatmawati et al (2020), the subject group was observed for menstrual pain before the intervention was carried out, then the intervention was given by administering 150 ml of turmeric acid herbal medicine once a day for 4 days. Subsequent observations carried out measurements of menstrual pain 1 hour after the intervention was given and there was potential for herbal turmeric tamarind to affect the intensity of menstrual pain in adolescence.

Meanwhile, in Tabari et al (2020) study, the intervention group was given 2 curcumin capsules containing 500 mg of turmeric extract for the first three days of two menstrual cycles and the placebo group took capsules containing 10 grams of corn starch. The results showed that there were differences in dysmenorrhea pain in the two groups so that curcumin was effective in



treating the severity and duration of dysmenorrhea.

According to Lestari, Tubagus & Septi (2023), the group was given sour turmeric drink for three days. The results showed that the turmeric tamarind drink was effective in reducing dysmenorrhea pain. According to Makiyah & Nofa (2023), there are differences in menstrual pain (dysmenorrhea), namely severe pain (69%) and after intervention it becomes moderate pain (57.1%). So tamarind turmeric is effective in reducing dysmenorrhea pain in adolescence.

The use of turmeric tamarind as a non-pharmacological therapy has been carried out with various preparations ranging from original processed turmeric and tamarind, processed turmeric tamarind powder and turmeric tamarind which has been processed into capsules. The results of the study showed that intervention by administering tamarind turmeric was effective in reducing dysmenorrhea pain in adolescents.

Turmeric tamarind also contains aluminum, magnesium, zinc, iron, calcium, potassium, vitamins A and C. Meanwhile, tamarind also contains vitamin B, vitamin C, antioxidants, beta-carotene, minerals that are beneficial for the body (Safitri et al, 2014).

## CONCLUSION

In this case, turmeric tamarind, as a local wisdom, can be used to treat and reduce dysmenorrhea in adolescence. Processing tamarind turmeric must also be considered. According to (Ministry of Health, 2023), when processing herbal medicines/plant ingredients you need to pay attention to several things such as consumption within one day or if stored in the refrigerator (maximum 2-3 days), the herbal medicine must also be safe; quality and useful.

Nurses in this case can act as educators, implementers and researchers. The role as an educator is to provide education to young women about consuming tamarind turmeric as non pharmacological treatment for dysmenorrhea. The role of the implementer to provide nursing care regarding dysmenorrhea therapy for adolescent girls. As well as the role as researchers, namely

nurses can carry out further research regarding qualitative studies regarding the effectiveness of turmeric tamarind.

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